April 2, 1929. A. R. JOHNSON 1,707,859

AMUSEMENT APPARATUS

Filed July 14, 1928 3 Sheets-Sheet 1

Fig. 1.

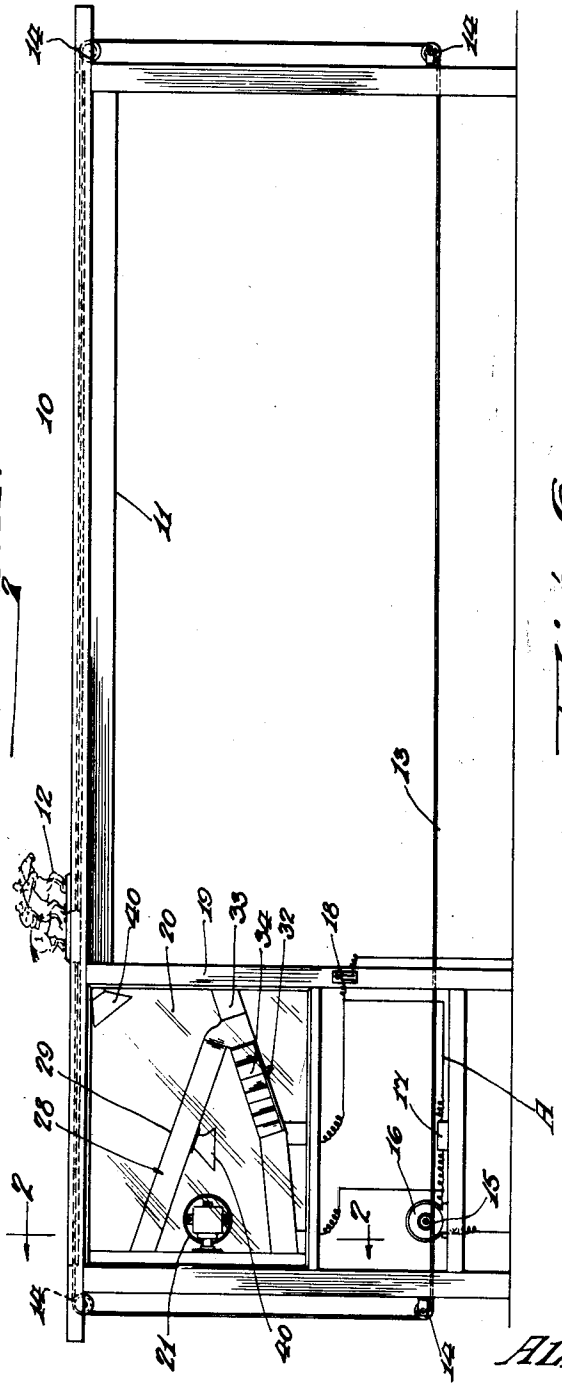
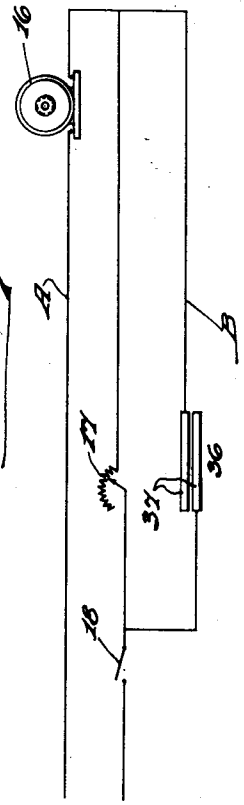


Fig. 6.



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Fig. 2.

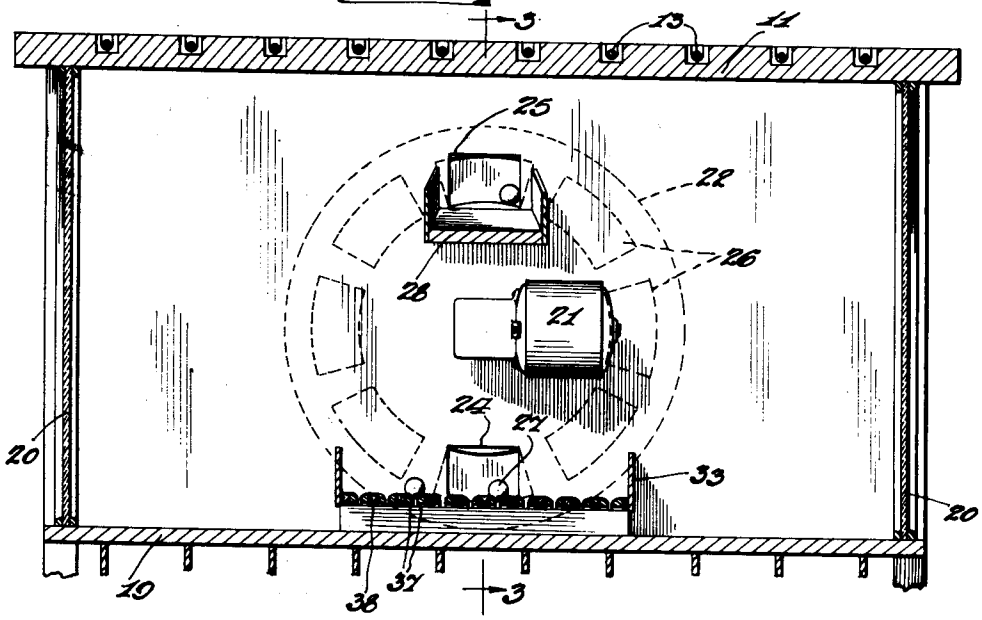
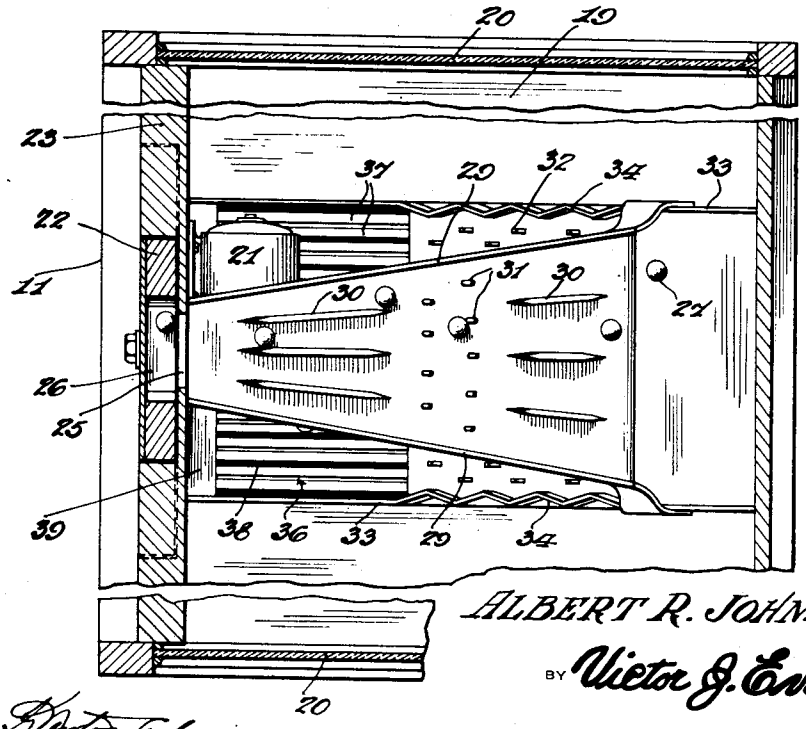


Fig. 4.



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Fig. 3.

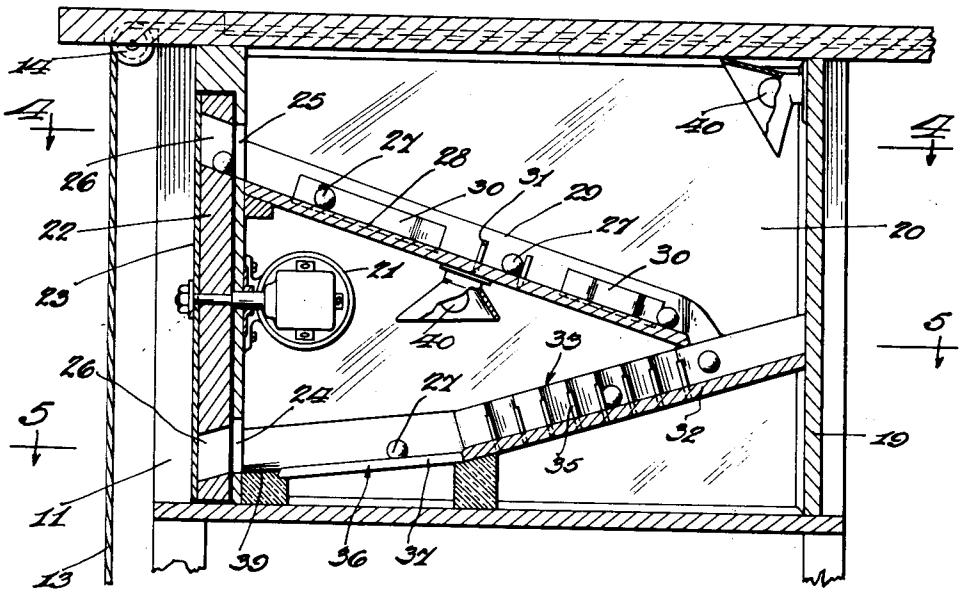
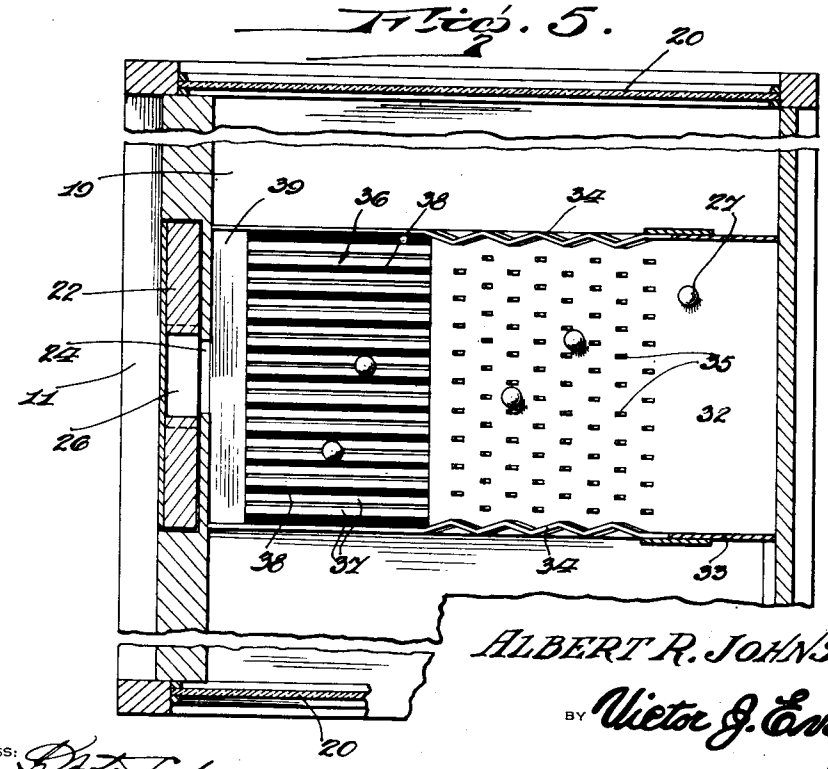


Fig. 5.



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Patented Apr. 2, 1929. 1,707,859

UNITED STATES PATENT OFFICE.

ALBERT RICHARD JOHNSON, OF NEW YORK, N. Y.

AMUSEMENT APPARATUS.

Application filed July 14, 1928. Serial No. 292,621.

This invention relates to improvements in amusement apparatus.

The primary object of the invention resides in an amusement device wherein a number of miniature horses or objects are movable over a course, each driven by individual driving means at a set speed and which driving means may be speeded up by travel of balls over a runway, the respective driving means so affected being dependant on the particular course taken by the balls.

Another object of the invention is the provision of an amusement device including individual electric motor driven objects movable over a course at a relatively slow rate of speed, and a runway having sets of contacts arranged in the respective motor circuits which are normally open but are adapted to be closed by the weight of the passage of balls rolling thereover which closed contacts increase the current to the respective motors to accordingly increase the speed of the respective objects over their courses, the balls travelling in a continuous cycle until one of the racing objects completes its course and is declared a winner.

A further object is the provision of an attachment for use in connection with racing games now on the market for controlling the speed of travel of the respective racing objects to inject more excitement and amusement into the game.

A still further object is to provide an attachment for racing games in which two reversely inclined runways are provided for the passage of balls thereover, and a continuously rotating wheel having ball receiving pockets therein, the balls being released from the pockets onto the upper runway which is provided with obstructions to cause the balls to take irregular courses before dropping upon the lower reversely inclined runway, the latter having contact strips thereon over which the balls pass to control the operation of the racing objects, the balls finally entering the pockets of the wheel to again be deposited onto the upper inclined runway.

With these and other objects in view, the invention resides in certain novel construction and combination and arrangement of parts the essential features of which are hereinafter fully described, are particularly pointed out in the appended claims, and are illustrated in the accompanying drawing, in which:—

Figure 1 is a side elevation of my improved amusement device.

Figure 2 is a vertical transverse sectional view on the line 2—2 of Figure 1.

Figure 3 is a vertical transverse sectional view on the line 3—3 of Figure 2.

Figure 4 is a horizontal sectional view on the line 4—4 of Figure 3.

Figure 5 is a similar view on the line 5—5 of Figure 3.

Figure 6 is a diagrammatic view of one of the electric control circuits.

Referring to the drawings by reference characters, the numeral 10 designates a game device which includes a table or frame structure 11 having miniature racing objects such as horses 12 movable thereover from a starting position at one end of the table to a finish position at the opposite end. The horses are driven by endless individual cables 13 to which they are fixedly connected and which pass around pulleys 14 suitably mounted in the frame structure. One lead of each cable passes around a pulley wheel 15 carried by the rotatable shaft of an electric driving motor 16. Each motor is arranged in an electric circuit A with a source of electric current and each has a rheostat or resistance 17 therein for setting the circuit to cause the motor to run at a set rate of speed. All the circuits are set to drive the horses at an even slow rate of speed. A master control switch 18 is suitably located on the frame structure by which all circuits may be simultaneously opened or closed. From the description thus far it will be seen that when the control switch is turned on, all the driving motors will be put in motion to impart movement to the cables. However, unless some controlling elements was injected into the apparatus, all the horses would finish at the same time, therefore, I provide an attachment for such a race by which the speed of the horses may vary and which is affected without favoritism for any one of the racing horses.

Mounted upon the frame structure beneath the top thereof is a housing 19 having transparent glass windows 20 in the opposite side walls thereof, and mounted within the housing 19 is an electric motor 21 which is arranged in a separate circuit from the circuits

A but which is controlled by the same master switch 18 so that when the switch is turned on, all the motors 16 and motor 21 are set in motion. Fixed to the drive shaft of the motor 21 is a wheel 22 enclosed within a casing 23 which has a ball inlet opening 24 adjacent the bottom thereof, and a ball outlet opening 25 adjacent the top. The wheel 22 has radially arranged pockets 26, the walls of which are inclined so that the metal balls 27 will seat into the pockets when the same register with the opening 24 and be carried up to roll therefrom.

A chute or inclined runway 28 has its raised end fitting against the casing 23 beneath the opening 25, the side walls 29 of which diverge outwardly from the casing to provide a wide area for the balls to spread out during their travel thereover. Ribs 30 and pins 31 rise from the runway to deflect the balls in their travel to cause them to take irregular courses thereover.

Mounted directely beneath the chute 28 to receive the balls as they pass therefrom is a reversely inclined chute or runway 32 having side walls 33 for confining the balls thereto. The side walls are corrugated for a portion of their length as at 34 to deflect the balls when coming in contact therewith. The upper portion of the runway 32 is provided with spaced upstanding pins 35, which like the pins 31 and ribs 30 tend to deflect the balls to vary their courses before finally passing onto tracks 36 at the lower end of the runway 32. The angularity of the tracks is less than the angle of the upper end of the runway so that the speed of the balls when passing thereover is slightly retarded. There is a track for each race horse and each comprises a pair of spaced metal strips 37 over which the balls are adapted to roll. The space between the respective strips of each set serving as a trough to receive and guide the balls in their travel thereover. Each set of contact strips are spaced from each other by insulation 38. The sets of contact strips are arranged in the respective circuits A as shown in Figure 6 of the drawings wherein each circuit is provided with a conductor wire B through which the current will pass when the contact strips are bridged by the balls, as the current will take the path of least resistance. There being no resistance in the path of the current, the full force of the same passes on to the motor and will speed up the same until the ball has rolled from the track into the trough 39 at the bottom of the runway 32. The balls collect in the trough until one of the pockets in the wheel register with the opening 24 whereupon one or more balls will enter and be carried up by the wheel and again released onto the upper runway for another trip.

From the foregoing description, it will be seen that the speed of the racing objects may be intermittently increased as the balls roll over the tracks which tends to put added interest into the device. In playing the game, the several players may choose one or more horses which they believe will win the race and may view the progress of the race from the sides of the frame structure or at the finish end thereof. The players may also view the travel of the balls down the runways as the housing 19 has transparent windows 20. Electric lamps 40 may be suitably arranged within the housing to properly illuminate the same.

What is claimed as new is:—

1. In an amusement apparatus having racing objects movable over a course, individual driving means for said racing objects adapted to move them at a like rate of speed, said individual driving means including electric motors arranged in individual electric circuits, a master switch common to all of said circuits for controlling all of them simultaneously, a resistance in each circuit for reducing the flow of current to the respective motors, a set of circulating balls, tracks for the passage of said balls thereover, and means operable by the passage of the balls over said tracks for causing current to flow direct to the respective electric motors without passing through the said resistance to increase the speed of the driving means.

2. In an amusement apparatus having racing objects movable over a course, individual driving means for said racing objects adapted to move them at a like rate of speed, said individual driving means including electric motors arranged in individual electric circuits, a master switch common to all of said circuits for controlling all of them simultaneously, a resistance in each circuit for reducing the flow of current to the respective motors, a set of circulating balls, tracks for the passage of said balls thereover, obstacles in the path of movement of said balls, and means operable by the passage of the balls over said tracks for causing current to flow direct to the respective electric motors without passing through the said resistance to increase the speed of the driving means.

3. In an amusement apparatus having racing objects movable over respective courses, individual driving means for the respective racing objects including an electric motor arranged in an electric circuit, an inclined runway, sets of spaced contact strips on said runway and arranged in the respective electric circuits, and a series of balls of conducting material movable over said inclined runway from the top to the bottom thereof for bridging said sets of spaced contact strips to close the respective circuits.

4. In an amusement apparatus having racing objects movable over respective courses, individual driving means for the respective racing objects including an electric motor

arranged in an electric circuit, an inclined runway, sets of spaced contact strips on said runway and arranged in the respective electric circuits, and a series of balls of conducting material movable over said inclined runway from the top to the bottom thereof for bridging said sets of spaced contact strips to close the respective circuits, and means for picking up said balls at the lower end of said runway and depositing them upon the higher end thereof to roll thereover.

5. In an amusement apparatus having racing objects movable over respective courses, individual driving means for the respective racing objects including an electric motor arranged in an electric circuit, an inclined runway, sets of spaced contact strips on said runway and arranged in the respective electric circuits, and a series of balls of conducting material movable over said inclined runway from the top to the bottom thereof for bridging said sets of spaced contact strips to close the respective circuits, and obstructions along said runway for deflecting said balls during their passage thereover, and means for picking up said balls at the lower end of said runway and depositing them upon the higher end thereof to roll thereover.

6. In an amusement apparatus having racing objects movable over respective courses, individual driving means for the respective racing objects including an electric motor arranged in an electric circuit, an inclined runway, sets of spaced contact strips on said runway and arranged in the respective electric circuits, and a series of balls of conducting material movable over said inclined runway from the top to the bottom thereof for bridging said sets of spaced contact strips to close the respective circuits, and means for picking up said balls at the lower end of said runway and depositing them upon the higher end thereof to roll thereover, said last means including a rotatable wheel having radially arranged pockets therein.

7. In an attachment for electrically motor operated racing game devices, reversely inclined runways coacting to provide a continuous chute, sets of spaced contact strips suitably arranged along said chute, a series of balls of conducting material adapted to roll down said runways, and a rotatable wheel having pockets therein for receiving said balls from the lowest end of said chute and lifting them to and releasing them onto the highest end thereof for gravitation thereover.

8. In an attachment for electrically motor operated racing game devices, reversely inclined runways co-acting to provide a continuous chute, sets of spaced contact strips suitably arranged along said chute, a series of balls of conducting material adapted to roll down said runways, and a rotatable wheel having pockets therein for receiving said balls from the lowest end of said chute, and lifting them to and releasing them onto the highest end thereof for gravitation thereover, and ball deflecting elements arranged along said runways for causing said balls to take irregular courses in their passage over said runways.

In testimony whereof I have affixed my signature.

ALBERT RICHARD JOHNSON.